

Shipping Guidance per International Maritime Dangerous Goods (IMDG) Regulations (2000 edition)

As a result of deployment of U.S. forces to Iraq, the Army has been required to make shipment of radioactive commodities by sea. The vast majority of radioactive shipments made are designated as instruments and articles (excepted packages) which are exempt from many labeling and marking requirements of IMDG, IATA and 49 CFR for that matter. This guidance is intended for the following TACOM Commodities CAM/ICAM/M43A1/ACADA(M22) and tritium commodities. The information below will serve only as a guide. If you consistently make shipments by sea, TACOM recommends you purchase the IMDG regulations for reference and updates.

A. Packaging Provisions for Class 7. (section 4.1.9). Packages must meet general provisions in chapter 6.4.2. Chapter 6.4.2 basically states you must ship the radioactive material in a package that can withstand normal transport conditions. Quantity of material cannot exceed limits in 2.7.7.1. for instruments and articles per package or item as follows:

<u>Isotope</u>	<u>Instruments Limit</u>	<u>Package Limits</u>
	Curies (Becquerel)	Curies (Becquerel)
Am241 (M43A1)	2.7 (0.10 TBq)	270 (10 TBq)
Ni63 (ICAM/ACADA)	8.1 (0.30 TBq)	810 (30 TBq)
Tritium (H3)	21.6 (0.40 TBq)	216 (40 TBq)

B. Special Packaging Provisions Chapter 4.1.9

Package surveys

- Wipe test 4 Bq or 22 dpm/cm² beta/gamma surface contamination limit (with a 300 cm² wipe area)
- Wipe test 0.4 Bq or 2.2 dpm/cm² alpha surface contamination limit (with a 300 cm² wipe area)
- Radiation level at surface < or equal to 5 uSv/hr or at 10 cm < 0.1 mSv/hr
- Each instrument bears the name RADIOACTIVE

C. Marking and Labeling of Packages Chapter 5.2.1.5

- Each package should be legibly and durably marked on the OUTSIDE of the package with 1) consignor OR consignee, OR both
- Each excepted package (instruments or articles) have UN 2911 on the shipping package. The SHIPPING NAME is NOT REQUIRED to appear on the external surface of the package.
- Each package in excess of 50 kg (110 lbs) MUST have the permissible gross mass legibly and durably marked on the outside of the package.

D. Dangerous Goods Transport Document (DGTD) Chapter 5.4.1.1.1

The document must meet the requirements of SOLAS 74, Ch VII, regulation 5: MARPOL 73/78 Annex III, regulation 4. An example of the form appears in IMDG Part 5, page 196.

- a. Proper shipping name: RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS OR ARTICLES, UN 2911
- b. Number and kind of packages (box, crate, fiberboard, etc)
- c. Total quantity of dangerous goods. In the case of radioactive material the maximum amount in tera Bq (TBq) for each package
- d. Physical form (liquid, solid or gas)

E. Radiation Protection Program Chapter 1.1.3.2

This chapter addresses the transportation of radioactive material in accordance with established radiation protection program. The chapter references the ALARA concept of which the Army is required to comply with since it is Federal law. The chapter also specifies the need to monitor personnel who engage in the transportation of radioactive material. Your local or unit RSO is ultimately responsible for making sure the transportation of radioactive materials is done in accordance with applicable regulations. The transportation of TACOM-RI commodities do not present a potential for external or internal exposure to personnel due to the fact they are sealed sources having low radioactive activity.